

Care and Use of Plants in the Home

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Although the house is not an ideal place to grow plants, they are most desirable in today's indoor decorative scheme. To grow house plants successfully, it is necessary to understand their basic requirements, and to apply good cultural methods.

GROWTH REQUIREMENTS

Light

Light is essential to the production of food within plants. Indoor light may be *direct sunlight* where the sun shines through the window onto the plant; *indirect bright light* in a window that does not receive direct sun, or near a sunny window beyond the sun's rays; or *indirect low light* on or near an inside wall, or well into the middle of a room.

Window direction is not the only consideration for light within the home. Porches, trees, and the proximity of neighboring houses must all be considered in choosing a location for plants.

Most flowering plants do best with at least a half day of direct sunlight.

To develop, flower buds require high light intensity. Cacti and many succulents that are grown for their unique forms also require a sunny situation. Coleus and crotons must be grown in direct sun to maintain their decorative foliage colors.

Ivies, philodendrons, foliage begonias and peperomias, which are grown mainly for their foliage, do well in indirect bright light rather than direct sunlight. Tender plants such as African violets and gloxinias also should be grown in indirect bright light during the summer when the sun's rays are intense.

Locations away from windows (on inside walls, in dark hallways or in the centers of rooms) may not receive enough light to maintain a plant in good growing condition. Although many decorative schemes call for accents of plants in these locations, flowering plants should not be used. Foliage plants may be placed in indirect low light if they are shifted to a bright light location for a few days after having been used in the low light area for a week or two. Another method is to have two sets of plants that can be shifted alternately every week: one set receives normal light while the other is being used in the decorative scheme.

Plants located near a lamp utilize the artificial light. However, a small amount of light for a few hours each night does not compare with sunlight or indirect bright light. With especially planned lighting, it is possible to grow plants entirely with artificial

light. For additional information on this technique, write to the Floriculture Department, New York State College of Agriculture, Ithaca, New York.

Temperature

Plants can grow indoors within a fairly wide range of temperatures. The ideal condition is about 70°F. during the day, and a slightly lower night temperature. If the night temperature is 70°F., the day temperature may range higher. Flowering plants will retain blossoms longer if lower temperatures are provided. A plant next to a window is in a much colder spot during the winter, especially when there are no storm windows or thermopane panels.



Scindapsus aureus, is one of a group of plants that are grown in indirect light.



Like most flowering plants, a geranium, **Pelargonium hortorum**, requires direct sun.



Dieffenbachia picta is well-adapted for indoor use because it does not require high light intensity.

SOME POPULAR PLANTS LISTED BY LIGHT REQUIREMENTS

Direct sunlight

Direct light is found in the south and west window areas of the home exposed to sunlight for approximately six hours. During mid-summer the exposure can be too intense for many of these plants. Use the bright light locations then.

Agave americana—Century Plant
Aloe arborescens—Octopus Plant
Begonia tocotrana—Christmas Begonia
Bromeliad—Air Plant
Cacti—many genera
Cattleya—Orchid
Chamaedorea elegans (*Neanthe bella*)
 Dwarf Palm
Chrysanthemum morifolium—
 Chrysanthemum
Citrus—many species
Codiaeum variegatum pictum—Croton
Cordylone terminalis—Ti Plant
Crassula argentea—Jade Plant
Cryptanthus boucieri—Earth Star
Cyclamen persicum—Cyclamen
Dracaena godsefiana—Gold Dust
Fuchsia hybrida—Lady's Eardrops
Gardenia jasminoides—Gardenia
Hedera helix—English ivy
Hoya carnosa—Waxplant
Hydrangea macrophylla—Hydrangea
Maranta kerchoveana—Prayer Plant
Pelargonium hortorum—Geranium
Pilea cadeterei—Aluminum Plant
Saxifraga sarmentosa—Strawberry Begonia
Schlumbergera bridgii (*Zygocactus truncatus*)—Christmas Cactus

Indirect bright light

Bright light is considered to be just beyond the reaches of sun's rays in a room.

Begonia rex-cultorum—Rex Begonia
Caladium bicolor
Dieffenbachia picta 'Rudolph Roehrs'
Episcia cupreata—Flame Violet
Fatsiobedera lizei
Ficus elastica 'Decora'—Rubber Plant
Ficus lyrata (*pandurata*)—Fiddle Leaf Fig
Monstera deliciosa—Crimman
Neprolepis exaltata 'Bostoniensis'—
 Boston Fern
Peperomia cataracta—Emerald Ripple
Peperomia
Peperomia griseo-argentea
Philodendron 'Florida'
Philodendron hastatum—Elephant Ear
Philodendron selloum
Philodendron wendlandii
Saintpaulia—African Violet
Schefflera actinophylla—Australian
 Umbrella Tree
Scindapsus aureus 'Marble Queen'
Scindapsus pictus 'Argyraeus'
Senecio cruentus—Cineraria
Senecio mikanioides—German Ivy
Stunningia spectiosa—Gloxinia
Spathiphyllum kochii
Tolmiea menziesii—Piggy-Back Plant

Indirect low light

Low light locations are those a distance 8 or more feet from windows, with only general illumination. All plants listed will grow much better with bright light.

Aglaonema simplex—Chinese Water
 Evergreen
Aglaonema pictum
Aspidistra elatior—Cast Iron Plant
Asplenium nidus—Birdnest Fern
Aucuba japonica 'Variegata'—Gold Dust
 Aucuba
Cissus antarctica—Kangaroo Vine
Cissus rhombifolia—Grape Ivy
Dieffenbachia amoena—Dumb Cane
Dieffenbachia picta—Dumb Cane
Dracaena deremensis 'Warneckii'—
 Striped Dracaena
Dracaena fragrans 'Massangeana'—
 Corn Plant
Dracaena sanderiana
Pandanus velitchii—Screw Pine
Phalaenopsis amabilis—Moth Orchid
Philodendron oxycardium (*cordatum*)
 Heartleaf Philodendron
Pittosporum tobira—Pittosporum
Podocarpus macrophylla maki—Sea Teak
Pteris cretica—Pteris Fern
Sansevieria 'Hahnii'—Birdnest Hemp
Sansevieria trifasciata—Bowstring Hemp
Spathiphyllum floribundum
Syngonium podophyllum—Arrowhead Plant

Water

Plants can be watered from the top, from the bottom, or by automatic means. There is no one best way; most plants will do equally well with any of the methods.

Plants watered from the top require a well-drained soil mixture, because plants will rot at the crown if excess water does not drain through the soil. The correct amount of sand and peat moss in the potting mixture will provide good drainage (see page 7).

The main advantage of bottom watering is that it avoids water collecting around the crown of the plant. Plants watered from the bottom of the pot are set in a deep saucer which is filled with water. After an hour or two, any remaining water should be removed. Several plants can be watered at once by setting the pots in a dish pan or sink. A common error is to keep the saucer continually filled with water. The lower half of the soil becomes excessively moist and roots soon rot.

The wick method provides a way for plants to be watered automatically. By this system, water is placed in a separate pan or reservoir beneath the pot from which a fiberglass wick draws the water into the soil by capillary action. The soil is kept in a moist condition, neither excessively wet nor dry. No drainage material is used in the bottom of the pot because it would prevent contact of the wick with the soil. An advantage of wick-watering is that with a large res-



Saintpaulias are especially suited to wick watering. Here the pot is tipped to show the wick in contact with the water.

ervoir, the plants do not have to be tended more than once a week or longer. It is necessary to fill the reservoir when the water gets too low to maintain capillarity.

The container in which a plant is grown will determine the kind and frequency of watering. A porous clay pot of the regular greenhouse type absorbs water from the soil and evaporates moisture from its surface. It also allows drainage of free water through a bottom hole. Plants in porous pots need watering most frequently, but there is also less danger of overwatering.

Glazed pots (conventional clay containers that have been glazed or painted) and ceramic, metal or plastic pots with drainage holes do not allow water to evaporate from their sides. A glazed pot does not require as much water as a porous one; it allows excess water to drain through the bottom hole.



Plants grown in a clay pot are more attractive if the pot is placed in a jardiniere.

A jardiniere is any nonporous container with no drainage hole; it requires careful watering to avoid excess moisture. The best insurance against overwatering is a one- to two-inch layer of coarse sand or gravel in the bottom of the container. Many dish and planter gardens, as well as individual plants, are grown in this container. Because no moisture escapes through the sides or bottom of such pots, plants require less watering.

A plant may be grown in a porous clay pot set in a jardiniere. This arrangement combines the good drainage aspects of the clay pot with the attractiveness of the jardiniere. The space between the two may be kept free for air circulation or it may be filled with moist peat or sphagnum

moss to prevent rapid drying of the soil.

Humidity

Plants grow best in a humid atmosphere, but most houses are dry (have a low humidity), especially in the wintertime. The drier the air, the greater the loss of water from the plants. If the plants are watered adequately, methods of increasing humidity can be ignored.

Avoid locating plants in drafts created by heating units, fans, open windows, or doors. Plants wilt in these locations because the leaves lose more water than the roots can supply.

Nutrients

Because plants manufacture their own food, they require certain nutrients that are absorbed through the roots. The simplest way to provide these is to mix a complete fertilizer with the soil when the plants are potted or repotted. A 5-10-5 or 4-12-4 analysis fertilizer is a low concentration suitable for house plants. It can be used at the rate of one level teaspoon per six-inch pot of soil mixture or one six-inch pot of the fertilizer per bushel of soil mixture.

If plants are potted in the fall, they will need some supplementary fertilizer in the spring. Dissolve one teaspoon 5-10-5 or 4-12-4 fertilizer in a quart of water and apply this solution generously every eight to ten weeks. Patented fertilizers in tablet, powder, or liquid form are more expensive, but are satisfactory for keeping the plants in good condition.

These fertilizers should be used according to the manufacturer's directions. Overfertilizing can damage plant roots severely; use no more than the recommended amount.

Practically everyone who grows plants has some special system for fertilizing them. Although most home systems have a basis in fact, they frequently give only a partial treatment, and in some cases are even harmful. The use of a complete fertilizer is the easiest and most reliable way of supplying needed nutrients.

Potting mixture

An ideal soil for house plants is made of equal parts of sand, garden loam, and peat moss. A mixture of these three ingredients will provide both good moisture retention and drainage of water. It is not advisable to use garden soil alone. Clay soils pack and prevent good drainage and aeration. Sandy soils lose water before plant roots can make use of it.

Soil sterilization

To avoid soil-borne insects and diseases, it is best to sterilize the potting mixture before it is used, or to buy small amounts of prepared potting soil from florists or nurserymen who have sterilizing equipment.

Soil can be sterilized at home by a simple, inexpensive formaldehyde treatment which does not impair the soil texture. Commercial formalin (40 percent formaldehyde) can be obtained at drug stores. Use it at the rate of two and one-half tablespoons diluted with one cup of water

to each bushel of the sand, loam, and peat moss mixture. Sprinkle the diluted formaldehyde over the soil and mix it in thoroughly. Cover the mixture with a newspaper and let it stand for 24 hours. Then uncover the soil and allow it to air for another day or until *no* odor of the chemical can be detected; it is then ready for use.

GENERAL MAINTENANCE

In addition to basic cultural requirements, there are general practices to improve the appearance and prolong the lives of plants in the home.

A more uniform shape can be encouraged by occasionally turning a plant to expose all sides to the light source. The frequency of rotating a plant will depend upon its rate of growth and the intensity of the light. In time, a plant may outgrow its useful size, and a sharp knife or pruning shears should be used to cut it back to a desired size or form. Plants can be pruned just above a node on the stems or canes to be shortened. Pruning also will keep the faster growing plants in a more compact shape.

It is a good practice to wash the leaves of plants regularly to remove dust accumulations. Sometimes this will produce surprising improvements in the growth and vigor of plants. Do not shine leaf surfaces with oily substances because this attracts dust. Always remove the discolored foliage on a plant; yellowing or dead leaves are unattractive and can encourage disease problems.



A pot-bound plant should be shifted to a larger pot.

After a plant has grown in one pot for a year it may need to be shifted to a larger container. Turn the pot upside down and tap the edge sharply on the edge of a table or bench. If the soil is slightly moist, the soil ball will slip out of the pot in one piece.

If roots are clearly visible around the outside of the soil ball, the plant should be shifted to a larger pot. Use the next larger size pot both for appearance and for good growth. Keep the soil ball intact, and use new soil to fill the additional space in the larger pot. The roots will grow out into this new layer of soil, and the plant will not have been disturbed by the transfer.

If roots are not visible, scrape a layer of old soil from the soil ball, and repot the plant in the same pot. Use new soil to replace what was removed.

If old pots are used, they should be boiled to kill any soil-borne diseases or insects. A new porous pot should be soaked in water, or it will absorb moisture that is needed by the plant.

COMMON TROUBLES

Loss of older foliage may be a result of low light, too much or too little water, high temperatures, or gas injury. Determine the cultural requirements for the individual plant.

Leaf spots can be caused by excess sunlight, dry soil, diseases, or insects. Hairy-leaved plants may become spotted by hot or cold water drops on the foliage. Use room temperature water for these plants.

Yellowing of the foliage may be caused by poor light, too wet soil, or excessive applications of fertilizer which have injured the roots. If these

conditions are not the cause and the plant has a good root system, fertilizer may be needed to improve the vigor of the plant.

Rotting at the base can be caused by excess water at the crown of the plant, a difficulty that can be corrected by the use of the correct soil mixture. Crown rot is also caused by disease, and a plant thus affected should be discarded.

Aphids, mealy bugs, white flies, red spider mites, scale insects, thrips, and other insects injure house plants in various ways. An excellent descriptive bulletin, *Insects and Related Pests of House Plants*, Home and Garden Bulletin, Number 67, is available from the Superintendent of Documents, Washington, 25, D. C., for 15 cents. For additional information, contact the county agent in your County Extension Service.

DECORATIVE USES

Foliage and flowering plants have become increasingly important as decorative features in homes, hotels, and business offices. The great variety of types, sizes, shapes, and textures make plants attractive additions to interior decoration.

The open simplicity of a contemporary interior focuses attention on the plant. Large-leaved plants such as dieffenbachia, monstera, and philodendron are especially suitable to modern decor because they provide the size necessary to make them a feature in the room (see cover showing *Philodendron hastatum*.)

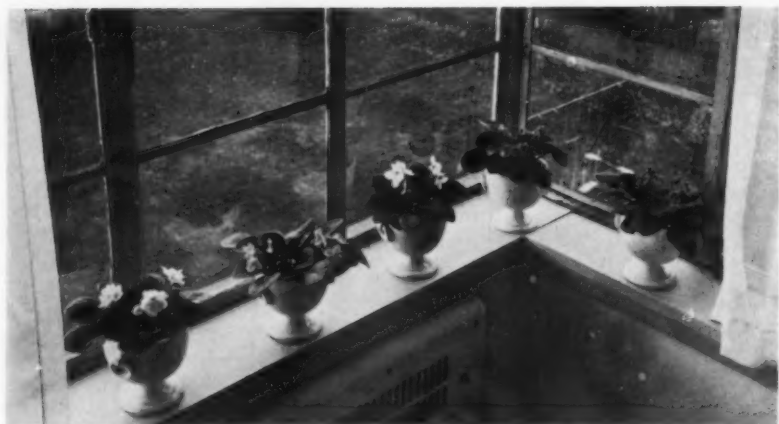


A miniature leaved ivy, *Hedera helix*, is used as an accessory in a traditional setting.

Smaller plants such as geranium, fern, and begonia are better suited to the period or traditional interior. Plants in these situations serve as accessory decorations rather than as features.

In traditional settings, many of the small varieties often are grouped together. In contemporary decor, several plants of a single variety such as geranium, coleus, or African violet can be massed to form a featured display.

Some larger leaved plants such as aspidistra and rubber plant, which were popular specimens a few years ago, are equally appropriate in contemporary settings. The different styles of the two types of decorating can help determine the plant material.



Several varieties of *Saintpaulia* in similar containers are used in a contemporary setting.

Selection of Plants

A decoration can be made more interesting by the addition of the new or different plants that can be found in many florist shops nowadays.

To choose a plant, first determine where it will be located. If an individual plant or a dish garden is to be used on a table, chest, or desk, select plants of low to moderate height. *Dracaena*, *Peperomia*, *Saintpaulia*, *Sansevieria*, and *Saxifraga* are genera that provide many species suitable for use on surfaces in a room.

When using a specimen plant on the floor for accent or when combining several in a planter, the larger types can be used. Genera such as *Dracaena*, *Ficus*, *Monstera*, *Philodendron*, and *Schefflera* provide numerous species of plants that grow to a larger size.

To be most attractive, a shelf, wall, or hanging container requires plants that have trailing or climbing growth habits. The various species of *Cissus*, *Hedera*, *Hoya*, *Philodendron* and *Scindapsus* are effective plants for this use.

Frequently a window area may be used to feature plants. A good treatment would make use of several plants of a single type such as African violets. Repeating the one kind of plant gives an appearance of uniformity. The practice of combining many types of plants in a single area does not present a good decorative appearance.

Containers

Select a container that blends well and is in scale with the plant material. Use a container that repeats the color of existing furnishings or accessories



Ficus elastica 'Decora,' the rubber plant, which was popular in Victorian times, is effective in a contemporary setting.



Low plants are appropriate for an end table, coffee table and a desk. Left to right are *Saintpaulia*, *Peperomia obtusifolia*, and *Peperomia griseoargentea*.

of the room, or use a complimentary color to provide a harmonious contrast with the room decor. A plant in a standard clay pot can be more attractive if it is placed inside a jardiniere.

It is not essential that a container have drainage facilities. With a bottom layer of gravel and careful watering, the drainage hole is not necessary. This increases the possibilities when selecting a container. There are a great many ceramic containers of various shapes and sizes suitable for plants. The type and size of plant material will help to determine the container size. The depth is especially important for the large foliage plants that require good anchorage. Flowering plants and the brilliantly colored foliage plants need containers that do not compete with or detract from their beauty. Decorated or colorful containers are more easily used for the regular foliage plants. If several plants are used in one location, such as a window

or table area, use one color and one type of container. This will avoid a conflict of interest and present a uniform appearance.

Individual Plants, Dish Garden, and Planters

If flowering plants are to be used they should be potted separately, but foliage plants often appear better when several types are combined in a dish garden or planter. The large foliage plants that serve a decorative purpose as specimen plants should be potted individually.

Frequently there are several potted plants within a home that could be combined to make an effective planter. For successful culture, the plants combined must have similar growth requirements. The light quality and the water requirements needed for normal growth, should be the same for all of the plants. To achieve and maintain uniformity, the planter should be stocked with plants of sim-



Monstera deliciosa can be placed on the floor as a specimen plant.



Suitably placed vining or trailing plants are, left to right: *Cissus rhombifolia*, *Hoya carnea* 'Variegata', *Hedera helix* cultivar.



A white flowered Saintpaulia in a white jardiniere that repeats the flower color.

ilar growth rates. Leave the plants in the pots, shift them around in several arrangements to find the best combination before transplanting. The arranging is easy while the plants are potted individually and it is this procedure that results in an effective grouping. For a symmetrical treatment, feature a tall plant in the center with shorter plants on either side. For an asymmetrical design, place the tallest plant off center, balanced by lower plants on the opposite side. Balance and proportion between heights is just as vital to the appearance as balance of plant shapes and leaf outlines.

Allow ample space for each plant. If planted too close they will not only appear crowded but will grow poorly. On the other hand, plants set too far apart produce a sparse appearance. For good visual balance, the container should be in proportion to the mass of the plant material.

Many homes feature a large built-in planter which should be treated to prevent rusting and provided with drainage facilities. To insure better drainage, use a few inches of gravel in the bottom of the planter before adding the soil mixture, or place the potted plants directly on the layer of gravel. The space between pots can be left open or filled with vermiculite, peat moss, or sphagnum moss. This is a simple way to maintain plants in a large container. The plants can be replaced or changed later without disturbing their roots.



A symmetrically arranged dish garden with *Peperomia obtusifolia* for height balanced with *Hedera helix* on either side. *Pilea involucrata* has been included for a low facing plant in the middle.



An asymmetrical arrangement in which *Peperomia obtusifolia* and *Peperomia obtusifolia variegata* provide the off-center height. *Hedera helix* balances the height on the sides. *Pilea cadierii* is used to fill the center.

An Extension publication of the
New York State College of Agriculture,
a unit of the State University,
at Cornell University
Ithaca, New York

AUGUST 1961



Cooperative Extension Service, New York State College of Agriculture
at Cornell University and the U. S. Department of Agriculture co-
operating. In furtherance of Acts of Congress May 8, June 30, 1914.
M. C. Bond, Director of Extension, Ithaca, New York. PS-15M

